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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,922	10/21/2003	Akira Ezawa	101655.01	3187

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ALEXANDRIA, VA 22320

EXAMINER

TRAN, NHAN T

ART UNIT	PAPER NUMBER
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2622

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/688,922	EZAWA ET AL.	
	Examiner	Art Unit	
	Nhan T. Tran	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/174,095.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/174,095, filed on 10/16/1998.

Specification

2. The title of the invention ("Electronic Camera") is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

3. Claim 14 is objected to because of the following informalities: claim 14 depends from itself. Appropriate correction is required.

The Examiner assumes that claim 14 depends from claim 7 for examination.

Note that there are multiple art rejections applied to claims 1, 7, 15 & 23.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1-6 & 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito et al. (US 4,689,689).

Regarding claim 1, Saito discloses an electronic camera (Fig. 1 and abstract) comprising:

a photoelectric converter (CCD 7; Fig. 1 and col. 2, lines 48-49);

a shutter (shutter unit 6) having a single set of shutter blades (Fig. 2, wherein a single set comprises two blades 6c1 and 6c2) that move to open and close between a closed state, in which the shutter blades block light from reaching the photoelectric converter, and a shielding release state (open state), in which the shutter blades do not block the light from reaching the photoelectric converter (see col. 2, line 66 – col. 3, line 5; col. 4, lines 51-52 and col. 5, lines 29-35).

Regarding claim 2, Saito further discloses a shutter driver (13) that drives the shutter blades; and a controller (23), coupled to and controlling the photoelectric converter (via driver 13) and the shutter (via driver 14), to begin charge accumulation by the photoelectric converter when the shutter blades are in the shielding release state (see Fig. 3, t1-t6), and to control the shutter driver to place the shutter blades in the closed state after the charge accumulation is completed (see Figs. 1-3 and col. 4, line 31- col. 5, line 45).

Regarding claim 3, also disclosed by Saito is that the controller operates the shutter driver to change the shutter blades from the closed state to the shielding release state in response to a release operation (shutter release operation), causes the charge accumulation of the photoelectric converter to begin thereafter (Fig. 3), and operates the shutter driver in order to close the shutter blades (after t6) after the charge accumulation is completed (see Fig. 3 and col. 4, line 31 – col. 5, line 45).

Regarding claim 4, also disclosed by Saito in Figs. 1-3 is that a movable mirror (4) in an optical path of the light, the movable mirror being movable between a viewing position (prior to t1), in which the movable mirror directs the light to a viewfinder (OVF at prism 5), and an imaging position (from t1-t10), in which the movable mirror withdraws from the optical path to allow the light to reach the photoelectric converter prior to the charge accumulation by the photoelectric converter (Figs. 1-3; col. 4, line 8 – col. 5, line 63), wherein the controller controls the shutter driver to begin placing the shutter blades in the shielding release state (at t1) between the withdrawing of the movable mirror (t1) and a beginning of the charge accumulation (t5) by the photoelectric converter after a specified time elapses after the movable mirror withdraws from the optical path (see Fig. 3 and col. 4, line 8 – col. 5, line 63).

Regarding claim 5, Saito further discloses that the controller controls reading of the accumulated charge from the photoelectric converter after the charge accumulation

is completed and the shutter blades are moved to the closed state (Fig. 3 and col. 5, lines 29-59).

Regarding 6, it is clearly seen in Saito that the controller inherently controls the shutter driver to drive the shutter blades into the shielding release state after the charge reading is complete so that another image can be taken (Fig. 3 and col. 3, lines 65-67).

Regarding claim 23, the limitations of this claim are also met by the analysis of claim 1 and note that the photoelectric converter (7) is clearly provided an optical path of light within the electronic camera, and the shutter is placed between the photoelectric converter and a portion (lens 2) of the electronic camera as shown in Fig. 1.

5. Claims 1 & 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Morisawa et al. (US 4,611,243).

Regarding claim 1, Morisawa discloses an electronic camera (Fig. 1 and abstract) comprising:

a photoelectric converter (image sensor 32; Fig. 3 and col. 3, lines 17-19);

a shutter (23) having a single set of shutter blades (a single set comprises two blades 29 & 30 shown in Fig. 3 and col. 3, lines 15-20) that move to open and close between a closed state, in which the shutter blades block light from reaching the photoelectric converter, and a shielding release state (open state), in which the shutter

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blades do not block the light from reaching the photoelectric converter (Fig. 3 and col. 3, lines 15-37 and it should be noted that the closed state and open state of the shutter 23 are inherent in the camera in order to function to control exposure as disclosed).

Regarding claim 23, the limitations of this claim are also met by the analysis of claim 1 and note that the photoelectric converter (32) is clearly provided an optical path of light within the electronic camera, and the shutter is placed between the photoelectric converter and a portion (lens 11) of the electronic camera as shown in Fig. 3.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7, 8, 10, 13-16, 18, 21 & 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. (US 4,689,689) in view of Ishiguro (US 5,483,284).

Regarding claim 7, Saito discloses that the photoelectric converter (7) is disposed in an image pick-up unit (CCD package 7 itself as shown in Figs. 1 & 2); the shutter is disposed in a shutter unit (shutter unit 6 shown in Fig. 2).

Saito fails to disclose a portion of the image pick-up unit that opposes the shutter unit protrudes into a portion of the shutter unit.

However, as taught by Ishiguro, an electronic camera (Figs. 1 & 3B; col. 2, line 56 – col. 3, line 19) is constructed such that a portion of an image pick-up unit (surface of CCD package and support pins 8A) that opposes to a shutter unit (unit 21 including the support frame that creates aperture 1A) protrudes into a portion of the shutter unit. Such an arrangement clearly provides a compact structure for the electronic camera.

Therefore, it would have been obvious to one of ordinary skill in the art to modify the electronic camera in Saito such that a portion of the image pick-up unit opposing to the shutter unit would protrude into a portion of the shutter unit so as to provide a compact structure for the electronic camera as taught by Ishiguro.

Regarding claim 8, as clearly disclosed by Saito in Fig. 1 and col. 2, lines 49-50 that the portion of the image pickup unit that opposes the shutter unit has a filter (color filter 8), the filter located between the shutter blades (of shutter unit 6) and the photoelectric converter (7). Thus, Saito in view of Ishiguro as provided in claim 7 also meets the limitation of "the filter protrudes into the portion of the shutter unit" since the color filter (8) is located on the surface of the photoelectric converter (7).

Regarding claim 10, Saito in view of Ishiguro also discloses that the shutter blades move at approximately a right angle to an optical path of the light that reaches the photoelectric converter (see Fig. 2), and the shutter unit is disposed at an angle in a main camera body of the electronic camera so that, when the shutter blades are in the closed state, a distance between each of the respective shutter blades and the

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photoelectric converter is substantially equal (as illustrated by Fig. 2, the distance between each of blades 6c1 & 6c2 and the CCD 7 is *substantially* equal for both open and closed states).

Regarding claim 13, Saito in view of Ishiguro clearly discloses that the portion (8A in Ishiguro) of image pick-up unit that opposes the shutter unit is in contact with the shutter unit (see Figs. 1 & 3B of Ishiguro).

Regarding claim 14 (note that this claim is assumed to be dependent from claim 7 in view of the claim objection above), also disclosed by the combined teachings of Saito and Ishiguro is that a resilient member (at pins 8A shown in Figs. 1 & 3B of Ishiguro) that presses the image pickup unit into contact with the shutter unit.

Regarding claims 15, 16 & 18, the limitations of these claims are also met by the analyses of claims 1, 7, 8 & 10 in which "a shutter curtain" is indicated by the shutter blade.

Regarding claims 21 & 22, the limitations of these claims are also met by the analyses of claims 13 & 14, respectively.

7. Claims 9 & 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. and Ishiguro and in further view of Haraguchi (JP 07098481 A).

Regarding claims 9 & 17, Saito and Ishiguro disclose that the shutter blades move at an approximately a right angle to an optical path of the light that reaches the photoelectric converter (see Saito, Fig. 2). Saito and Ishiguro fail to disclose a shutter blade that moves by a largest amount is disposed farther from the photoelectric converter than other ones of the shutter blades.

Haraguchi teaches a camera (Fig. 3), wherein the shutter blade of shutter swing group (12) that moves by a largest amount is disposed farther from image pick-up element than the other ones of the shutter blades.

Therefore, it would have been obvious to one of ordinary skill in the art to replace the shutter blades in Saito and Ishiguro with the set of shutter blades taught by Haraguchi to arrive at the Applicant's claimed invention so that the number of driving elements for the shutter blades would be reduced, thereby reducing mechanical complexity of the camera. Disposing the shutter blades farther from the photoelectric converter would also prevent any interference to occur between the shutter blades and the photoelectric converter.

8. Claims 7, 11, 12, 15, 19 & 20 are rejected under 35 U.S.C. 103(a) as being unpatentable Morisawa et al. (US 4,611,243) in view of Ishiguro (US 5,483,284).

Regarding claim 7, Morisawa also discloses that the photoelectric converter is disposed in an image pick-up unit (image sensor circuit board 31 shown in Fig. 3 and col. 3, lines 17-19); the shutter is disposed in a shutter unit (23).

Morisawa does not teach that a portion of the image pick-up unit that opposes the shutter unit protrudes into a portion of the shutter unit.

However, as taught by Ishiguro, an electronic camera (Figs. 1 & 3B; col. 2, line 56 – col. 3, line 19) is constructed such that a portion of an image pick-up unit (surface of CCD package) that opposes to a shutter unit (unit 21 including the support frame that creates aperture 1A) protrudes into a portion of the shutter unit. Such an arrangement clearly provides a compact structure for the electronic camera.

Therefore, it would have been obvious to one of ordinary skill in the art to modify the electronic camera in Morisawa such that a portion of the image pick-up unit opposing to the shutter unit would protrude into a portion of the shutter unit so as to provide a compact structure for the electronic camera as taught by Ishiguro.

Regarding claim 11, as clearly shown in Fig. 3 of Morisawa, the shutter unit includes a lens-side frame (28) located on a side of the shutter unit that faces away from the image pick-up unit, the lens-side frame has a first opening part to transmit the light to the shutter blades, the first opening part is formed smaller than a cross-section of the portion (the front surface of image sensor 32) of the image pick-up unit that opposes the shutter unit, and a shutter curtain (29, 30) defined by the shutter blades has a size corresponding to the first opening part.

Regarding claim 12, Morisawa further discloses that the shutter unit includes an image pick-up unit-side frame (the frame which is closest to the image sensor 32) on a side of the shutter unit that opposes the image pick-up unit, the image pick-up unit-side frame has a second opening part to transmit the light to the photoelectric converter (see Fig. 3 of Morisawa).

Although Morisawa does not explicitly disclose that the second opening part is formed larger than the first opening part and larger than the cross-section of the portion of the image pick-up unit that opposes the shutter unit. However, such feature is met by the analysis of claim 7. As the portion of the image pick-up unit protrudes into the shutter unit shown by Ishiguro in Figs. 1 & 3B, the opening part of the rear side of the shutter unit is made larger than the cross-section of the portion of the image pick-up unit that opposes the shutter unit so that a compact structure for the camera would be realized as provided in claim 7 above.

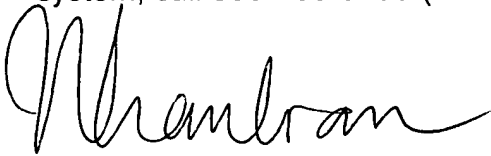
Regarding claims 15, 19 & 20, these claims are also met by the analyses of claims 1, 7, 11 & 12 above.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (571) 272-7371. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Nhan T. Tran', is written over the printed name.

NHAN T. TRAN
Patent Examiner